

## **ABSTRACT OF THE DISCLOSURE**

An optoelectronic transceiver is provided that includes a laser driver in communication with an optical transmitter. The laser driver includes an operational amplifier having three stages and connected with an optical transmitter. The first stage includes a differential amplifier that receives a reference voltage input, corresponding to a desired magnitude of the optical transmitter voltage, and an optical transmitter voltage input, representing an optical output strength of the optical transmitter, and having transconductance that increases exponentially as a difference between the reference voltage and the optical transmitter voltage increases. The differential amplifier generates an output current based on the inputs. The second stage integrates the output current to generate a first output voltage. Finally, the third stage is configured to receive as input the first output voltage to generate a second output voltage approximately equal to the first output voltage, the second output voltage controlling an optical transmitter bias current.

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